E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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THIS WEEK IN THE MARKETS...

- **A major U.S. custom smelter sells for February at 35c delivered. U.S. sales up.**
- **The largest selling aluminum extrusion billet up ½c less than the pig rise.**
- **Aluminum mill product prices up varying amounts. Lead sales best in months.**

COPPER—domestic average 34.200c a lb delivered

A leading custom smelter announced a price for February delivery of 35c a lb delivered. Sales have been made at this price. The tonnage priced in the U.S. was the highest this week since the last week of September. Sales outside the U.S. were down slightly from last week. Asarco's labor contracts are settled. Kennecott, Phelps Dodge and Anaconda are negotiating with unions. Failure to settle has firmed the New York Commodity Exchange, the LME and merchant prices. The latter were about 38¼c yesterday.

ALUMINUM—primary pig 24.7c to 26c a lb delivered
export 23.25c a lb c.i.f. foreign ports

Prices charged by U.S. primary aluminum producers for pig sold outside the U.S. were raised to 23¼c a lb delivered foreign ports. All U.S. primary pig producers except one has publicly indicated it is now at 26c a lb delivered in the U.S.

Major primary producers pushed up many mill product prices by amounts different from the pig price increase. Extrusion billets (6063—the major one) were jumped only 0.8c a lb, ½c less than pig. Independent billet producers will be concerned about this. Some other billets were raised 1.3c. Some sheet prices are reputed going up 2.2c—if this is true it may help the independent sheet maker. Depending on which forms or grades, it may put him back where he was before the new type of building sheet appeared last October.

Some sellers indicated concern about "leakage" of 23¼c aluminum pig into the 26c U.S. area. The spread between foreign prices and U.S. prices for pig has increased and some say that even though primary sellers at 26c (Alcan and the U.S. producers) will "police" it some (more) will get in. Major sellers of European primary aluminum in the U.S. indicate they are getting no greater tonnage for sale here. One has said his price is rising here but another said he has no more to sell and therefore is not indicating a new price.

West German sellers are not increasing their European prices. Other European sellers may raise in Europe soon but it is still uncertain. European sellers will continue to charge U.S. customers more than their domestic buyers—unlike U.S. sellers who sell to foreign customers at much lower prices.

Some factors here feel the 40,000 tons of new capacity coming in in France, probably within a month, could prevent firming prices; others claim there is a shortage in Europe, especially in Germany, which will prevent a weakening effect. New Norwegian capacity, under Swiss control, may also not weaken European markets.

Major secondary aluminum die-casting alloy prices were not raised (see prices on p9). Other secondary prices were raised.

The increasing number of primary aluminum sellers in the U.S. market are making the pricing situation more complex. Though in the future all may quote identical prices this is less certain than in the past. Some sellers have been backing in buyers at old prices; probably price weakness in the future will be reflected in considerable price "discounting" rather than varying quotations. This may be more prevalent in mill products than pig.

Alcoa settled its labor contracts with both the USW and the Aluminum Workers. The total is 28¼c for three years; of this wages are 20.8c. Reynolds has settled with USW and expects to settle with the Aluminum Workers soon.

LEAD—12c a lb New York

A leading custom smelter cut lead to 12c a lb New York from 12½c, Monday December 21. It had cut to 12½c December 14. The drop results from the same conditions indicated here December 17.

Sales moved up this week to 7,780 short tons. This is the highest since the third week of August when expectation of labor troubles caused buyers to anticipate a price rise. The increased sales reflect the view the lead price is unlikely to drop more in the near future.

TIN—99c a lb, N.Y.

The tin market is silent. Platers are reported covered through the 80-day steel strike cooling-off period. Prices in London and N.Y. were little changed despite the slump, with Pool buying the steadying influence. Observers are predicting little chance of a price rise when the strike ends. Increased supplies of metal are certain to be available.

ZINC—Prime Western 12½c a lb East St. Louis

Sales of zinc in the U.S. were good this week though down somewhat from last week. Already this month sales have been about 2½ times as much as for all of November. The pick up in sales reflect the view that prices will not drop and a good outlook for consumption in the steel, automobile and appliance industries.

London zinc, though still a little under the recent top of about a week ago, was up Wednesday about ¼c from Monday.

The U.K. government announced it will sell 3,000 tons of zinc in January; 2,100 will go to the original sellers and 900 will be sold on open tender. It sold 3,000 tons in November.

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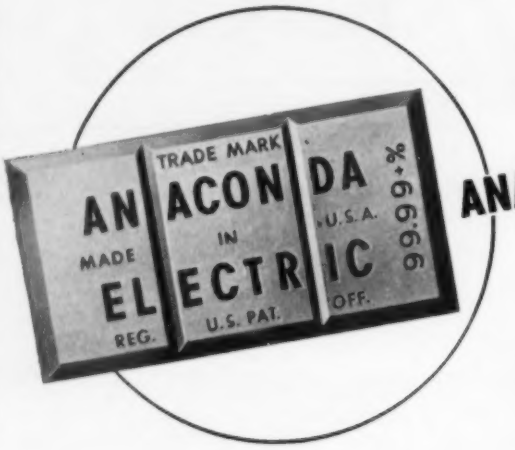

A consistent favorite with the trade for zinc-base die casting alloys. Year in and year out many leading die casters use Anaconda Electric Zinc. Always available from

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E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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Six Copper Producers Form Products Development Assn.

Copper Products Development Association Inc. has been formed by six major copper producers to conduct research and studies "for expansion of uses of copper and copper products and the development of new and improved copper products."

Member companies are: American Metal Climax Inc.; American Smelting & Refining Co.; The Anaconda Co.; The International Nickel Co. of Canada Ltd.; Kennecott Copper Corp.; and Phelps Dodge Corp. Any producers of copper is eligible for membership, and other copper companies will be invited to participate shortly.

Dr. Clyde Williams, for many years the key leader and recently president of Battelle Memorial Institute of Columbus, Ohio, has been named technical director pro tem.

The new organization presently does not intend to provide its own facilities for investigations, but will allocate research assignments to individuals, universities and established research organizations.

The initial board of directors consists of two members of each of the charter companies, as follows: Arthur H. Bunker, Jean Vuillequez, Amax; J. D. MacKenzie, Simon D. Strauss, Asarco; Clyde E. Weed, John A. Coe, Anaconda; Henry S. Wingate, O. B. J. Fraser, Inco; Charles R. Cox, Glenn P. Bakken; and Robert G. Page, John J. Conlon, Phelps Dodge.

Officers of the association will be elected by the board at its first meeting, scheduled for early January, 1960.

The non-profit association will have a technical development committee and a market development committee. Both

(Continued on page 11)

Strauss Sees Need for Higher Silver Price to Hoist Output

"Silver is finding increased use – both as an industrial raw material and as a monetary metal," according to Simon D. Strauss, vice president of the American Smelting and Refining Co. at a recent meeting of the Mining and Metallurgical Society in New York.

The most recent available statistics published by the U. S. Mint, Strauss pointed out, show industrial use of silver on a world basis has been approximately 200-million oz a year in recent years. With greater application of silver by the electronic and photographic industries this is likely to rise still further.

"The same source shows coinage uses in recent years have been ranging between 50-million and 100-million oz annually," he said. "France and Italy are now introducing silver coinage while Austria and Germany did so several years ago. Still other countries are reported to be considering silver coinage, even including the United Kingdom which demonetized silver shortly after the end of World War II.

"As against a total demand of 250-million to 300-million oz, new world mine production of silver is only slightly more than 200-million oz a year. This is well below the level of silver production prevailing prior to World War II. The situation shown in the reports of the Bureau of the Mint is not likely to be reversed soon because at current prices for silver an increase in world mine production of any magnitude is unlikely," Strauss said.

"Much of the world silver production is derived as a by-product of such base metals as copper, lead and zinc. However, the newer copper, lead and zinc mines of the world have little or no

(Continued on page 11)

Hinted Government Tin Sales Seen Deterrent to High Prices

London (McGraw-Hill World News): The International Tin Council meeting in London early this month came up with an export hike revision slated to keep the metal's price fairly steady over the next few months.

The Council announced that for the next quota period – first three months of 1960 – producing members of the Tin Agreement would be permitted to export 36,000 tons of metal. That's a sizeable jump over the 30,000 tons scheduled for the last quarter of this year, and the 25,000 tons allowed during the third quarter 1958.

It represents over 95% of the six members production capacity.

By appreciably raising the export quota, the Council showed it's determined to keep the price of tin below $2,240 a long ton. It's thought higher quotas will relieve market pressure likely to arise if U. S. steel labor problems finally are resolved. An additional 6,000 tons of tin available from exporting countries, along with the 2,500 long tons scheduled to be off-loaded from the British Government stockpile beginning December 28, and Buffer Stock tin reserves, are calculated to check any runaway price movement if demand pressures start building up.

The Council is particularly anxious to keep the price down, since the U. S. Administration has hinted it might initiate stockpile sales of its own should the price get uncomfortably high.

However, there's always the possibility that an increase in Stateside demand might not materialize. Much depends on steel trends after the "cooling-off" period. And if there's no real settlement, then you might see a weaker tin price early next year.

Recently the disappointing level of U.S. demand has kept the London market quiet.

Tin is steering a delicate path just now. Just what the immediate future holds appears to depend largely on U. S. demand trends.

Reports reaching London from Singa-

(Continued on page 11)

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Asarco Zinc Plant Stepping Up Output

The Corpus Christi zinc plant of American Smelting and Refining Co. is stepping up output of Special High Grade Zinc to about 9,000 tons a month.

This is the full capacity of the plant, which has been operating at two-thirds capacity for the past two years. Approximately 100 additional employees will be required.

Asarco reported a greatly increased demand for Special High Grade zinc, which is used principally by the die-casting industry. The large stocks accumulated by the company during the 1958-59 recession have been shipped to customers and plant output is being expanded to keep abreast of current orders.

International Minerals and Metals Corporation

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U.S. Lead and Zinc Imports

Imports of lead and zinc for the fourth quarter of 1959 were the following, in short tons, at about 4 pm December 22, according to data from the U.S. Customs Bureau.

Lead Ore

Country	entered	quota
Australia	filled	5,040
Canada	filled	6,720
Peru	filled	18,440
Bolivia	filled	2,520
U. of S. Africa	filled	7,440
Other	1,537	3,280

Lead Metal

Country	entered	quota
Australia	filled	11,840
Canada	7,805	7,960
Peru	filled	6,440
Mexico	filled	18,440
Yugoslavia	7,816	7,880
Other	filled	3,040

Zinc Ore

Country	entered	quota
Canada	filled	33,240
Mexico	34,971	35,240
Peru	17,252	17,560
Other	filled	8,920

Zinc Metal

Country	entered	quota
Canada	18,564	18,920
Mexico	165	3,160
Peru	1,880	1,880
Bel.-Lux.	196	3,760
Bel. Congo	filled	2,720
Italy	filled	1,800
Other	filled	3,040

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Rare Earth Metal Prices

Owing to the growing interest in rare earths, M&MM is publishing a Lindsay Chemical Division price list for rare earth metals. Prices, effective Apr. 1, 1959, are f.o.b. West Chicago, Ill. Quotes, except thorium, are for ingots or lumps. Prices for larger quantities are available. Minimum order $3. Rare earth oxide prices will be published next week.

Metal	Purity	Per Gram 10-99 gm	Per Gram 100-450 gm
Lanthanum	99.9%	$ .51	$ .34
Cerium	99.9%	.50	.33
Praseodymium	99.9%	.63	.42
Neodymium	99.9%	.63	.42
Samarium	99.9%	.66	.44
Europium	99.9%	13.90	9.25
Gadolinium	99.9%	1.10	.73
Terbium	99.9%	5.63	3.75
Dysprosium	99.9%	1.10	.73
Holmium	99.9%	1.10	.73
Erbium	99.9%	1.10	.73
Thulium	99.9%	6.93	4.62
Ytterbium	99.9%	1.89	1.26
Lutetium	99.9%	12.87	8.58
Yttrium	99.9%	.81	.54
Yttrium	80%	.63	.42
Yttrium-Mg alloy		.36	.24
Thorium powder		.15	.10

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USSR Metals in Short Supply

The Central Committee of the Soviet Communist Party has called for economy in the use of copper, nickle, lead, tin and other nonferrous metals, saying they are in short supply.

The Party sent letters to economic, trade union and party youth organizations and all workers and employees, said Tass, the official news agency.

Miscellaneous Metals

Wholesale lots, (a) f.o.b. ship. pt.; (b) delivered; (c) f.o.b. N.Y.; (d) Dep. on size of lot; (e) dep. on grade; (n) nom.

ALUMINUM: lb (b) eff. 12-17-59, ingot:
99.50% .....28.1c 99.80% 29.1c
99.75% .....28.6c 99.85% 30.1c

ANTIMONY: dom, lb., Dec. 17-23
boxed N.Y. (c) 32.590c
bulk (a) 29c
boxed (a) 29½c
imported 10-ton lots, 99½%, duty pd..24½c
99% 24c

BERYLLIUM: 97%, (a), lb $71.50

BISMUTH: lb, ton lots $2.25

CADMIUM: lb (b) Dec. 17-23
Ton lots, Eff. Oct. 1, 1959 .....$1.30
Less than ton lots $1.40
See Oct. 8, 1959, p. 12

CALCIUM: lb, ton lots, slabs, etc. $2.05

CHROMIUM: (b) lb of material,
exo. 98.5%, .05%C, ...(d)$1.15-1.19
Elec. 99.8% .....(d)$1.15-1.19
Vacuum melting .....4c more

COBALT: lb, (c), eff. 2-1-59
500 lb lots $1.75
100 lb $1.77
less than 100 lb $1.82
fines $1.75

COLUMBIUM: lb. 99½%, (d)
roundels $36
rough ingots $50

GALLIUM: gr, 1000-gr lots $3.00

GERMANIUM: gr
1000-gr lots, 1st red .....34½-35c(a)
intrinsic .....35c(b)&37c(a)
10,000-gr lots, 1st red .....33c(a)
intrinsic .....35c(a)(b)

INDIUM: tr oz, 99.9%, small lots $2.25
over 5,000 oz $1.25-2.25

IRIDIUM: tr oz $75-80

LITHIUM: lb 99.5% $9-11

MAGNESIUM: lb (a) 10,000 lb lots,
pig ingot 99.8% 35¼c-36.65c
notched ingot 36c-37.45c

MANGANESE: lb (b) 95½%, carloads,
bulk 45c
packed 45¾c
elec (a) frt. allowed E. of Miss., 99.9%..34c
ton lots eff. 4-1-57 .....36c
prem for hydrogen removed .....¾c lb

MOLYBDENUM: (a) eff. 8-56
powder, carbon red $3.35

NICKEL: lb (a) duty included 74c
eff. 12-6-56
dealers 74c
powder (b) U.S. 74c
sinter (nickel content) point of entry,
eff. 7-14-58 .....69.6c

OSMIUM: oz (n) $70-90

PALLADIUM: tr oz eff. 11-9-59....$22-24

PLATINUM: tr oz $77-80
average $77

QUICKSILVER: flask, N. Y. $214-16

RADIUM: mg, Ra content $16-21½

RHODIUM: tr oz $122-125

RUTHENIUM: tr oz $55-60

SELENIUM: lb, 2-19-58, comm grade $7
high purity $9.50

SILICON: lb (a) eff. 6-1-59
98% max. .51-1.0% Fe, crushed 20.85c
lump 19c
Hyper-pure: (4-1-57) #1.....$360
#2.....$250
#3.....$160
solar cell (4-1-57) .....$ 90

SODIUM: lb, carloads 16½c

TANTALUM: per lb. (a) (e), powder $40-58.60
sheet (e) $50.35-59.18
rod (e) $73.04-80.23

TELLURIUM: lb $2.50

THALLIUM: lb $7.50

TITANIUM: lb (a) A-1 99.3%
max. .3% Fe $1.60
max. .5%, Fe. eff. 8-1-59 .....$1.50

TUNGSTEN: lb 98.8%
1000-lb lots .....$2.75-$2.90
Hydrogen red 99.99% $3.10-4.00
dep. on Fisher No. eff. 6-29-59

VANADIUM: lb, 90% V 100 lb lots..$3.45

ZIRCONIUM: lb (a) sponge, powder
platelets: low hafnium $7-14
comm..... .....$5-10

Metallic Ores

Tons of 2000 lb or units of 20 lb, unless otherwise stated. Short ton unit=stu; long ton unit=ltu. (a) c.i.f. U. S. ports, (b) f.o.b. ship pt., (c) f.o.b. mine or mill (g) depending on grade, (i) import duty extra, (n) nominal, (t) term contracts.

ANTIMONY ORE: stu of Sb:
50-55% ..... $2.25-$2.40
60% ..... $2.50-$2.60
65% lump ..... $3.10-$3.20

BERYLLIUM ORE: stu BeO,
10-12%
Dom. (c) – dep. on quan. ..... $46-$48
Imported (a), (t) ..... $34-$34.50
Spot (a) ..... $31.75-$32.50

CHROME ORE: lt, dry basis, subject to penalties if guarantees are not met, f.o.b. cars, Atlantic ports
Rhodesian: (t)
48% Cr_2O_3, 3 to 1 ratio ..... (n) $34-$35
48% Cr_2O_3, 2.8 to 1 ratio ..... (n) $30-$32
48% Cr_2O_3, no ratio ..... (n) $25-$26
South African (Transvaal):
48% Cr_2O_3, no ratio ..... (n) $24-$26
44% Cr_2O_3, no ratio ..... (n) $18.25-$19
Turkish (basis 48% 3 to 1):
48% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... (n) $36-$37
46% Cr_2O_3, 3 to 1 ratio, lump and concentrates ..... (n) $33.50-$34
Pakistan (Baluchistan):
48% Cr_2O_3, 3 to 1 ratio ..... (n)

COBALT ORE: lb Co, free market
10% ..... (n) 60c
11% ..... (n) 70c
12% ..... (n) 80c

COLUMBITE ORE: lb pentoxide, 65% Cb_2O_5 and Ta_2O_5
Ratio 10:1 ..... $1.10-$1.20
Ratio 8½:1 ..... $.95-$1.05

IRON ORE: lt, lower lake ports, Lake Superior ore 1959:
Bessemer
Mesabi 51½% Fe $11.60
Old Range $11.85
Non-Bessemer
Mesabi 51½% Fe $11.45
Old Range $11.70
Eastern ores, ltu, delivered, foundry and basic, 56-62% ..... (n)
Swedish (t) (a) 60-68% stu (g) ..... (n)
Brazilian (b) 68½% gross ton, premium for low P, 1-1-59 ..... $11
Smaller sellers $11

MANGANESE ORE: (a) (i) ltu.
Mn 46-48
Ind. Fe 10, P.15, Al+Si 13 ..... (n) 87c-90c
S. Af. Fe 9, P.05, Al+Si 13 ..... (n) 87c-90c
Mn 48-50, Braz. Fe 5, P.1, Al+Si 7, As .2 ..... (n) 91c

MOLYBDENUM ORE: lb cont,
Mo.: 95% MoS_2 (b): (eff. 1.1.58)
Climax, cost of container extra $1.25
Molybdic trioxide MoO_3, bags (b) $1.46
cans $1.47

TITANIUM ORE: Ilmenite, gross tons TiO_2, 59½% f.o.b. cars, Atlantic ports ..... $23-$26
54% f.o.b. cars ..... $21-$21.50
Rutile, 94% st. for del. within 12 mos. ..... (n) $85

TUNGSTEN ORE: stu WO_3 65% basis foreign ore, (i), nearby arrival
Wolfram ..... $18.25-$19
Scheelite ..... $18.25-$19
Low moly scheelite, higher
U.S. scheelite, stu. (c) ..... $22-$24
London, ltu, WO_3 good ore
Wolfram 150s

VANADIUM ORE: lb V_2O_5 cont (c):
Domestic 31c

ZIRCON ORE: (sand) lt, (a)
Atlantic:
65% ZrO_2 ..... $50
Domestic 66%, st, (b):
Jacksonville ..... no quote
Stark, Fla. $47.25

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CHROME ORES • Refractory • Metallurgical • Chemical
MANGANESE ORES • Metallurgical • Chemical
IRON ORES • Open hearth • Blast furnace

Rolled Metals, Etc.

BRASS: Cents lb (base prices)

33c base:	Sheet	Wire	Rods
Yellow Brass	50.57	50.86	50.26
Best quality brass	52.07	52.36	51.76
Red brass 80%	53.53	53.82	53.22
Red brass 85%	54.58	54.87	54.27
Com'l bronze 90%	56.17	56.46	55.86
Gilding metal	57.23	57.52	56.92

Eff. 11-16-59

COPPER: lb, f.o.b. mill, eff. 11-9-59
Sheet, over 20" 57.13c
Rolls, 20" & under 56.41c
Wire, bare, carloads 38.35c

LEAD SHEETS: lb, full rolled 17½c

MONEL: lb, base prices
Standard sheet 97c
Cold-rolled strip 99c
Rods, hot-rolled 80c

NICKEL: lb, base prices
Sheet, cold-rolled $1.13
Rods, hot-rolled 94c

NICKEL SILVER: lb
Sheets, 10% 65.98c
18% 70.49c
Wire, Rods, 10% 68.06c

PHOSPHOR BRONZE: lb
Sheet, 5% Sn 77.44c
Wire, rods, 5% 78.19c
10% 84.93c

ZINC: lb, base prices, carloads, f.o.b. mill
Sheet 26c
Ribbon 21½c
Plates 20c

ZINC DIE CASTING ALLOY: lb, ingot carloads, del.
No. 3 ..... 15¾c
No. 5 ..... 16c

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Metallic Compounds

COPPER SULPHATE: lb, carloads, f.o.b., crystals or diamond, eff. 11-6-59
Per 100 lb $13.00

GERMANIUM DIOXIDE: gm 18½c

COBALT OXIDE: lb, 350-lb containers, 73½%, eff. 2-1-59:
East of Mississippi $1.33
West of Mississippi $1.36
70-71% $1.29-1.32

ARSENIOUS OXIDE: (arsenic trioxide) lb, refined, white, 99%, barrels,
Carloads, N.Y. docks 4-5c
F.o.b. Laredo 4½c
Bulk Laredo 3½c
Crude, N.Y. barrels 4½c
Tacoma 3.6c
Bulk, Laredo 2.5c
Tacoma 2.1c

ANTIMONY TRIOXIDE: lb, 50-lb bags, f.o.b., eff. 12-6-58
Carloads 24c
Less 26c

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Cabra Opens Competition For Copper Use Award

The second annual competition to honor the year's most outstanding contribution to the use, application, or metallurgy of copper and copper-base alloys has been officially announced by the Copper & Brass Research Association.

Winner of the 1960 competition will receive $1,000 and a bronze award to be presented May 17 at the Association's annual meeting in Hot Springs, Va.

Last year's Copper and Brass Achievement Award was given in recognition of the Seagram Building in New York, the world's first all-bronze skyscraper.

Entries and nominations for the 1960 Award may be submitted in any one of several classifications. Primary consideration will be given to originality of design of new or established applications of copper, brass, bronze, or other copper-base alloys; development of new products or improvement of marketing techniques; contributions to the metallurgy of the copper metals; improvement of fabrication methods in the manufacture of copper-based products; and contributions to science or research through the application of the copper metals.

Nominations for the 1960 Award competition should be mailed to the Association no later than Mar. 31, 1960. Entry forms with complete information are available from the Copper & Brass Research Association, 420 Lexington Ave., New York 17, N. Y.

Aluminium Ltd. Purchases Apex Smelting Company

Aluminium Ltd. has purchased the assets of Apex Smelting Co. for approximately 340,000 shares of Aluminium, subject to a definitive agreement, according to announcement by William A. Singer, Apex chairman, and Nathanael V. Davis, Aluminium president.

The transfer contemplates eventual distribution to Apex shareholders of approximately 1.6 shares of Aluminium for each share of Apex.

Apex Smelting Co. is one of the larger long-established producers of aluminum foundry alloys in the United States. Singer said the company operates plants in Chicago, Cleveland and Los Angeles, where aluminum scrap and primary aluminum are remelted into a large variety of foundry alloys and into extrusion billets. Alloys are sold to more than 1,000 foundry customers. Apex has also been a distributor since 1953 of Alcan primary alloys produced in Canada.

In addition to its aluminum activities, Apex is also important in the supply of zinc casting alloys and, to a lesser extent, of magnesium alloys. It also operates, largely for its own supply, a silicon smelting plant in Springfield, Oregon.

Commenting on the purchase, Davis said: "In the past we have found difficulty in handling U.S. customers' scrap and in giving service as complete as we would like to the foundry trade. The activities of Apex Smelting Co. should complement those of the Aluminium Ltd. group and improve our position to supply and service our customers in the United States."

"By purchasing Apex Smelting Co., Aluminium Ltd. will acquire plants in the United States which, in conjunction with its established sales organization, should broaden the company's activities as a seller of aluminum ingot products in all forms."

Davis added that Aluminium Ltd. will welcome into its organization the management personnel and other employees of Apex who have been responsible for the successful record and leading reputation which Apex has attained in the secondary aluminum industry.

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Beryllium Corp. Opens California Regional Office

The Beryllium Corp has opened a regional sales office in California to handle expanding demand for its beryllium metal and beryllium oxide products in the aircraft, missile and nuclear industries. This new office is located at 401 N. Brand Blvd., Glendale 4, Calif.

Ward Baxter Jr. has been appointed sales-development engineer in charge of the office which will be responsible for the beryllium metal and beryllium oxide activity in 16 western states. This new activity in no way affects The corporation's long established representative in its standard line of beryllium copper products, The E. Jordan Brookes Co., 6601 Telegraph Rd., Los Angeles 22. They will continue to warehouse beryllium copper foundry and mill products in California.

Reynolds to Build First Silicon Plant at Listerhill

Reynolds Metals Co. will build its first silicon plant at its Listerhill Reduction Plant near Sheffield, Alabama to handle increasing production of silicon aluminum alloys for the foundry industry.

Reduction Plant manager R. B. Newman said the electric furnace operations would have a capacity of about 5,000 tons of silicon metal per year. Construction is expected to begin about the middle of 1960, he said.

Silicon metal is added to aluminum to increase hardness and castability. Automotive castings, for example, usually require aluminum alloys containing from 5% to 12% silicon.

The 3600° electric furnace for the plant will be supplied by the Electromelt Furnace Division of McGraw-Edison Co, the plant is being designed by Reynolds Central Engineering Department in Richmond, so that additional furnaces may be added later.

It is anticipated that silicon production at this plant will fullfill the requirements for silicon metal at Listerhill and a portion of the requirements at other Reynolds reduction plants.

Operation of the plant will require only a few employees, Newman said.

Silicon metal is produced from quartzite with the aid of such carbon sources as coal or coke. High purity quartzite is found in central Alabama and in North Carolina.

Copper • Lead • Zinc • Tin • Molybdenum

silver—bismuth—cadmium
OFHC® Copper—OFHC® Copper Anodes
solder—metal powders—zinc-base alloys
selenium—tellurium—germanium

ferromolybdenum—technical molybdic oxide
technical thermite metallic molybdenum
molysulfide T.M.—molybdenum pentachloride
pure molybdic oxide—calcium molybdate

Molybdenum products are produced by
Climax Molybdenum Company—a Division
500 Fifth Avenue, New York 36, N. Y.

AMERICAN METAL CLIMAX, INC.
61 Broadway, New York 6, New York

AMAX

WATCH THESE TRENDS

GEODESIC DOMES, made of eight-sided metal or plastic tubular frames, are coming out of museum gardens and trade show plazas and are finding application on the DEW line, designed to withstand 200 mph winds, spanning record distances and enclosing bank lobbies.

A geodesic structure gets stronger as it is enlarged. In the special Nov. 12 issue of IRON AGE, the structures were termed "vital to metal fabricators."

The Ford Motor Co. planned its rotunda and discovered that its dome would weigh 160 tons—too much for the supporting walls. R. Buckminster Fuller, inventor of the geodesic principle, put up an aluminum geodesic dome that spanned 93 ft and weighed just 8½ tons. And he did it in 30 days. The Citizen's State Bank of Oklahoma City has a gold-anodized aluminum lobby inside a larger domed building shell.

The concept is not limited to domes and the earth will not soon look like a mushroom farm, for the designer states that the geodesic principle may be used for structures of any shape. The Museum of Modern Art in New York City is presently displaying two metal and one plastic example. The metal forms are manufactured of a new alloy—Aluminium Ltd.'s B51-S.

ZIRCONIUM ALLOYS with greater strength and heat resistance are reported both by Japanese and Soviet metallurgists. The Japanese say that phosphorus, in amounts from 0.03 to 0.06% by weight, seems to counteract the nitrogen effect. Also, Soviet metallurgists find tin additions to 4% increase both resistance to nitrogen damage and mechanical strength. Molybdenum, too, can improve mechanical properties, though it decreases corrosion resistance.

NEW DATA on beryllium-nickel alloy performance at elevated temperatures are being assembled by Brush Beryllium Co. and will be available within the next few months. Hot tensile and hardness data for both cast and wrought alloys of the general composition 2 to 3% BE, are being assembled and will be made available by the company.

LEAD PADS will support all 115 steel columns for the new Union Carbide building, straddling the New York Central's railroad trackage into Grand Central Terminal. Lead not only acts as an anti-vibration pad, but also can carry heavy loads and is resistant to corrosion, said the Lead Industries Association.

RAM-JET engines for Bomarc missiles use over 30% magnesium-thorium sheet, plate, castings and extrusions, making up the entire diffuser section of the missile, according to the Marquardt Corp. The alloys are manufactured by the Dow Chemical Co. and are chosen for their high strength-to-weight ratios at elevated temperatures.

A NEW ALLOY of zinc, titanium and copper has been announced by Hydrometals Inc. of New York. It was described as the first zinc alloy not to stretch or sag under 12,000-psi tension, suitable for a structural material. The metal is reportedly non-magnetic, non-sparking, weighs 0.258 lb per cu in., plates well, is corrosion resistant, can be imbedded in wet concrete, has good weldability and machinability and can be finished in any desired color.

TRANSISTOR and diode operation limits may be raised from 400° F to 1800° F by a new process for the preparation of high temperature semiconductors, developed by Stanford Research Institute of Menlo Park, Calif. Extremely pure silicon is melted in a carbon receptacle, the carbon diffusing into the silicon to form a saturated solution. By controlled heating a cool spot, supersaturated with silicon carbide, is formed in the crucible where crystals may grow.

SHEET COPPER windings for transformer coils are being developed by Westinghouse Electric Corp. Advantages of the new design are compact coil, reduction of losses and impedance, weight reduction, more effective cooling and total lower unit weight, according to the COPPER & BRASS BULLETIN.

ZINC FINISHES for steel bolts and nuts, said to possess twice the corrosion resistance of conventional electro-zinc finishes, is announced by Republic Steel Corp. The new finish, termed Brite-Gard, is now being applied to the company's line of electro-zinc-coated nuts and bolts. The finish is particularly recommended for use in corrosive atmospheres.

HONEYCOMB sandwiches of aluminum, making use of an aluminum foil core and aluminum skins to provide high-strength load-carrying panels, were described in Reynolds Metals Co.'s booklet, Adhesive Bonding of Aluminum. The principal was used by Fabrical Div. of Poly Industries Inc. of Pacoima, Calif. to fabricate the paddle wheels of Explorer VI.

ZINC ANODES are helping crab fishermen catch more crabs at lower cost reports Asarco's new nonferrous metals publication ASARCO DIGEST. The Federated Metals Div. is marketing a special 1¾ lb, 6 in. long anode with a 1-in. sq cross section which is attached to the wire mesh of the crab pot. The anode eliminates corrosion of the net by seawater as long as the zinc metal remains. The anode is finally disolved in the process but the crab pots have had their useful lives extended from eight weeks to eight months.

PRODUCTION of the world's largest copper closed-die forgings was recently disclosed by Wyman-Gordon Co., North Grafton, Mass. The forgings, weighing nearly one ton each, are nose cones for the Air Force Atlas and Thor missiles. Largest hydraulically closed-die forging press in the U.S. is used for the job; forges the copper nose cones in one pass.

ALUMINUM uses reported this month include aerosols, license plates and conductor coils of aluminum by Reynolds Metals Co. and aluminum transformers reported by ALUMINUM NEWS, an aluminum hulled merchant ship and replacement of 64,000 New York City cast iron lamp posts with aluminum substitutes. Also reported was a high speed automatic pipe welding machine designed to produce a 4500-ft, 8-in aluminum pipeline in Texas, by Alcoa, liquefied methane gas bottles of high magnesium-aluminum alloys, rocket motors, beer packaging and Pontiac's adoption of aluminum wheels with integral hub and breakdrum as optional equipment on its 1960 models, as reported by Kaiser Aluminum & Chemical Co.

METALS ORES

SUBSIDIARIES
AND AFFILIATES:

AMSTERDAM
LONDON
Argentina
Australia
Austria
Bolivia
Belgium
Brazil
Canada
Chile
Cuba
France
Germany
India
Italy
Japan
Korea
Mexico
New Zealand
Peru
Portugal
Rhodesia
Spain
Switzerland
Taiwan
Turkey
South Africa
Uruguay

ANTIMONY ORE
TUNGSTEN ORE
BISMUTH ORE
RUTILE
ZIRCON

Philipp Brothers Ore Corporation

PHIBRO

70 PINE STREET, NEW YORK • CABLES • PHIBRO NEW YORK

Streisand

E&MJ QUOTATIONS

Daily Prices of Metals

Dec.	COPPER ELECTROLYTIC Domestic Refinery	Export Refinery	Europe c.i.f.	LEAD New York	St. Louis	ZINC (b) Delivered (a)	East St. Louis	ALUMINUM Primary Pig 99.5% U.S. dest.	Export	TIN Straits New York
17	33.600	30.425	31.370	12.500	12.300	13.000	12.500	25.000	23.250	99.125
18	33.825	30.650	31.595	12.500	12.300	13.000	12.500	25.300	23.250	99.125
21	33.775	30.650	31.595	12.000	11.800	13.000	12.500	25.400	23.250	99.125
22	33.875	31.325	32.270	12.000	11.800	13.000	12.500	25.400	23.250	99.125
23	33.925	31.475	32.420	12.000	11.800	13.000	12.500	25.900	23.250	99.000
Averages	33.800	30.905	31.850	12.200	12.000	13.000	12.500	25.400	23.250	99.100
Calendar Wk. Avgs.										
Dec. 14-18	34.005	30.730	31.675	12.500	12.300	13.000	12.500	24.880	22.800	98.975

(a) Prime Western Zinc sold on delivered basis at centers where freight from East St. Louis exceeds one-half cent a pound.

The above quotations are our appraisal of the major United States markets, based on sales reported by producers and their agencies. They represent payments received by producers for the product. They are reduced to the basis of cash, New York or St. Louis, as noted. Prices in cents per pound.

Copper, lead and zinc quotations are based on sales for prompt and future deliveries; aluminum weighted average prices are based on estimated sales and announced prices; tin quotations are for prompt delivery only.

COPPER prices, domestic, in the trade are quoted on a delivered basis, that is, delivered at consumer's plants. Delivery costs vary with the destination. The above prices are net prices at the refineries; the average shipment cost is deducted in order to arrive at a refinery price. Beginning Jan. 2, 1957, the average differential between delivered and f.o.b. prices is taken as 0.400c per lb.

COPPER quotations, foreign or export, reflect prices obtaining in the open market and are based on sales in the foreign market reduced to the f.o.b. refinery equivalent, Atlantic seaboard. On f.a.s. transactions, eff. Jan. 2, 1957, we deduct 0.125c for lighterage, etc., to arrive at the f.o.b. refinery quotation.

COPPER, Europe, c.i.f., is the export refinery quotation with the addition of the lighterage figure 0.125c, and freight to main Continental ports, 0.82c.

COPPER quotations are for ordinary forms of wirebars and ingot bars. The premiums on special shapes, effective in some instances on deliveries beginning Sept. 1, 1955, are: Standard ingots 0.25c per pound; slabs 0.55c and up, cakes 0.6c and up, depending on weight and dimensions; billets 1.725c and up, depending on dimensions and quality. Discount on cathodes 0.125c to 0.15c per pound.

ZINC quotations reflect sales of the Prime Western grade as well as sales of other grades when sold on a Prime Western basis. (b) **Zinc premiums . . .** obtaining over Prime Western zinc in the East St. Louis market on the following grades, in cents per pound: **Selected 0.10c; Brass Special 0.25c; Intermediate 0.5c. High Grade** zinc sold on contract, delivered to the consumers' plants, commands a premium of 1½c per lb, eff. Sept. 2, 1959, over the East St. Louis basis for Prime Western. **Special High Grade** premium or differential is 1½c per lb, eff. Sept. 2, 1959.

LEAD quotations are for the common grade, and are based on sales of domestically refined metal sold to domestic consumers. The differential on sales in the Chicago district is 15 points under New York; for California 20 points under New York; for New England add 7½ points to the New York basis. Corroding grade commands a premium over common lead of 10 points.

ALUMINUM quotations refer to primary pig, 99.5% in cents per pound. The U.S. price is freight allowed to buyers' plant; it includes sales by Canadian producers. It is a delivered price but the buyer may arrange shipment and receive the standard freight allowance. The export price is the price at which U.S. primary producers sell c.i.f. (delivered) foreign ports. The quotations are weighted averages with the weights determined by the relative capacity of the producers. Ingot sales reduced to the pig price are included in determining the price. The premium on standard ingots is 2.1c per lb.

Note: The daily quotations for copper, lead and zinc are weighted averages of sales reported to *E&MJ*; weekly averages are arithmetical averages of the daily quotations; monthly averages are the arithmetical averages of the daily quotations.

Silver, Gold, and Sterling Exchange

Dec.	Silver N.Y.	Silver London	Sterling Exchange	London Gold (a)
17	91.375	80.250d.	279.9360	250s. 5d.
18	91.375	80.250d.	279.9000	250s. 4½d.
21	91.375	80.250d.	279.8000	250s. 5¾d.
22	91.375	80.250d.	279.7400	250s. 6¾d.
23	91.375	80.250d.	279.7325	250s. 6¾d.
Av.	91.375	—	279.822	—
Calendar Wk. Avgs.				
Dec. 14-18	91.375	—	279.940	(a) Open Market

The daily silver quotation reported by Handy & Harman, in cents and fractions of a cent per troy ounce, is the price paid by Handy & Harman in settlement for silver contained in unrefined silverbearing materials submitted to them for refining. It is determined on the basis of offers of bar silver .999 fine as made to Handy & Harman for nearby delivery at New York by regular suppliers in quantities sufficient to meet daily requirements, and it is usually one quarter cent below the price at which such offers are made.

The Treasury's purchase price of newly mined domestic silver was established at 90.5c per troy ounce, 1000 fine, effective on July 1, 1946 under an amendment to the Silver Purchase Act of July 6, 1939.

London silver quotations are in pence per troy ounce, basis .999 fine.

London gold quotations are per troy ounce, basis 1000 fine.

Sterling, in cents, noon buying rate for cable transfers as certified by the Federal Reserve Bank of New York, for customs purposes.

Aluminum Alloys Secondary Dec. 17-23

	Tons	Price/lb
No. 13	329	25.34c
No. 43	59	24.98c
No. 360	84	25.70c
No. 380		
1% Zn	2,490	23.93c
2% Zn		No Quote
3% Zn	908	23.01c

The secondary aluminum alloy prices are weighted average prices calculated from reports by secondary aluminum producers of the prices and quantities of their sales.

London Metal Exchange

Dec.	COPPER Cash Bid	Cash Asked	3 Mo. Bid	3 Mo. Asked	LEAD Current Month Bid	Current Month Asked	3 Mo. Bid	3 Mo. Asked	ZINC Current Month Bid	Current Month Asked	3 Mo. Bid	3 Mo. Asked	TIN Cash Bid	Cash Asked	3 Mo. Bid	3 Mo. Asked
17	251	251½	236	236½	72⅜	72½	72⅛	72¼	94½	95	90⅛	90¼	787	788	783	784
18	251½	252	236½	237	73	73⅛	72⅜	72½	93¼	93½	89½	89¾	788½	789	784	784½
21	260	261	241½	242	73	73⅛	72⅜	72½	93⅜	94	89¾	90	788	788½	783	783½
22	258	258½	240½	241	73¾	73⅞	73	73½	94¼	94½	90¼	90½	788	788½	783½	784
23	259	259½	241	241½	74¼	74½	73¼	73¾	95	95¼	90¼	90½	789½	790	784	784½

Prices are for the official a.m. session in pounds sterling per ton of 2240 lb. Copper basis electrolytic and fire refined wire bars, lead 99.97%, zinc 98% and tin min. 99.75%.

THIS WEEK'S BUSINESS INDICATORS

	Latest Week	Preceding Week	Month Ago	Year Ago	Net Change Year Ago
Steel Rate (% of capacity in operation)	(d) 93.1	(a) 96.3	93.9	68.0	+25.1
Steel Ingot Production, thousands of tons	(d) 2,636	(a) 2,726	2,540	1,840	+796
Automobile Production (cars and trucks)	(d) 178,092	(a) 103,645	84,660	168,406	+9,686
Electric Power Output (millions kwh.)	14,167	13,907	13,270	13,450	+717
Engr'g Const. Awards, 4-week daily av., in thousands (c)	$60,829	60,030	69,114	56,327	+$4,502
Federal Reserve Index of Industrial Production (e)	147 Nov.	....	148	139	+6
E&MJ Index of Nonferrous Metal Prices (e) (b)	129.5 Nov.	....	126.0	117.5	+12.0
All Commodities, Bureau of Labor Statistics (e)	(a) 118.9 Nov.	....	119.2	119.2	−.3

(a) Revised. (b) Weights based on 1922-3-4. (c) From Eng. News-Record. (d) Preliminary. (e) Base period (100) is 1947-49

Alcoa President Forecasts 10-15% Aluminum Pick-Up

Shipments of U.S. produced aluminum during 1960 will be the largest in history, continuing an upward trend which this year saw consumption of the light metal soar nearly 17% above the previous record peak established in 1956, according to Frank L. Magee, president of Aluminum Company of America.

Noting in a year-end statement that 1959 domestic industry shipments rocketed to an estimated 2.4-million tons, or about 35% above those for recession-stricken 1958, Magee expressed an opinion that the gain next year should be in the area of 10 to 15%.

He pointed out, however, that actual consumption of aluminum is expected to rise more than 10 to 15%, because many fabricators will draw from substantial inventories of aluminum already shipped to warehouses and manufacturing plants. Much of the inventory accumulation was prompted by fears of an aluminum industry strike at mid-year. This metal failed to move normally when the nation-wide steel walkout hit such large users of aluminum as the appliance, construction, and automobile industries.

While shipments of pig and ingot and mill products were at a new industry high, industry earnings did not show a corresponding improvement during 1959. This was because of the continued downward trend of prices as both foreign and domestic producers and fabricators competed in this period of excess capacity. During 1959, imports of semi-fabricated aluminum products reached an all-time high, doubling the previous peak achieved in 1958. Magee foresees a corrective strengthening of world aluminum prices in 1960, as the general economy improves both here and abroad.

The year ahead will see the aluminum industry continuing efforts to develop new, large volume markets through research, development and promotional activity. Alcoa's own 1959 research and development budget was a record $18-million. Meanwhile, the company now is detailing plans for a modern and all-inclusive research and development center at Merwin, Pa., on which construction is scheduled to begin late next year, and which ultimately will cost in excess of $30-million.

As aluminum demand improves, the industry stands ready to expand rapidly through the reactivation of idle facilities and the completion of partially built plants which can be brought into production quickly. Alcoa announced recently that it was bringing its new 150,000-ton Warrick (Ind.) smelter nearer to the point where it could operate on short notice, and that the company was moving now to complete a new die casting plant at Edison Township, N. J.

A keen awareness of the rapidity with which the present trend to broadened

(Continued on page 12)

GOLD
ZINC
CADMIUM
BISMUTH
SILVER
ANTIMONY
ARSENIC
LEAD
ANTIMONIAL LEAD

UNITED STATES
SMELTING REFINING & MINING CO.

Sales Office: 62 WILLIAM STREET
NEW YORK 5, N. Y.

Ferroalloys

(a) carload lots; (b) delivered; (c) lump, bulk; (d) f.o.b. shipping point; (n) nominal

FERROCHROMIUM: lb contained Cr; (a) (b) (c) cont. U S.
High carbon (4-9% C, 65-70% Cr).....28.75c
Cr) 28.75c
Low carbon (0.10% C, 67-72% Cr)
eff. Oct. 1, 1957 .....38.50c
Special (0.01% C, 63-66 % Cr) eff.
Oct. 1, 1957 .....37.75c
Charge chrome 1 .....22c
Refined chrome 1 .....25c

FERROCOLUMBIUM: lb contained Cb; ton lots, lump (2 in) packed; (b) cont. U.S.—(50-60% Cb. max 0.40% C, max 8% Si).....$3.45

FERROMANGANESE: lb (a), (c), (d) (74-76% Mn)
Standard, eff. Sept. 19, 1957 .....12.25c
Medium Carbon- lb contained Mn; (a), (c), f.o.b. U.S. — (80-85% Mn, 1¼-1½% C) 25.50c
Low carbon-basis as for Med. Carbon- (85-90% Mn, Max, 0.07% C)....35.10c

FERROMOLYBDENUM: lb Mo; lots 5000 lb or more, (d) (58-64% Mo) powdered, packed $1.82
Other sizes, packed $1.76
Calcium Molybdate (CaO MoO3) lump, packed $1.50

FERROPHOSPHORUS: per gross ton; (a), (c), (max 6 in.); (d) (equivalent to Tenn.) (23-26% P) $110
plus $4 per 1% above or below 24%.

FERROSILICON: lb contained Si; (a), (c), (d) (50% Si) 14.60c

FERROTITANIUM: low carbon — lb contained Ti; ton or more lots, lump (½ in.), packed, f.o.b. dest. NE U.S. — (40% Ti, max 0.10% C) $1.35
(25% Ti, max 0.10% C) $1.50
Medium Carbon — net ton; (a), lump, packed; f.o.b. dest. NE U.S. — (17 to 21% Ti, 3-5% C) $290-5
High carbon — basis as for Med. carbon — (15 to 19% Ti, 6 to 8% C)..$240-5

FERROTUNGSTEN: lb contained W; lots of 5,000 lb or more, lump (¼ in.), packed; f.o.b. dest. cont. U.S.—(70-80% W) (n).....$2.15

FERROVANADIUM: lb V; (a), var. sizes, packed; f.o.b. U.S. — (50-55% V)
open hearth $3.20
crucible $3.30
high speed $3.40

SILICOMANGANESE: lb; (a), (c), (d).
(1.5% C max 18-20% Si) 12.80c
(2% C max 15-17½% Si) 12.60c
(3% C max 12-14½% Si) 12.40c

SPIEGELEISEN: per gross ton; (a), (c) f.o.b. Palmerton, Pa.
3% max Si, 16-19% Mn $100.50
3% max Si, 19-21% Mn $102.50
3% max Si, 21-23% Mn $105.00
Eff. on orders of Jan. 7, 1957

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Acme Galvanizing Opens Modernized Plant in Oakland

The largest galvanizing plant in Northern California was opened this week in Oakland by the Acme Galvanizing Co.

The industrial firm has moved one-half block east to cover a full block with its new, greatly enlarged facilities, which include the largest All Around Kettle in the western states for hot dip galvanizing.

Silver Prices

(Continued from page 3)

precious metal content associated with the base metals. Thus, the rise in the production of the base metals has not increased the supply of silver.

"However, a higher price for silver might encourage the search for and development of new mines in which silver is the chief element of value.

"To date it has been possible to satisfy the rising level of industrial and monetary demand for silver by drawing down on the accumulated stocks of the metal. This includes silver obtained from demonetization of currency in certain countries (notably the U. K. and Cuba) and the release of silver from the so-called free stocks held by the United States Treasury.

"The United States Treasury has the right to sell silver from its free stocks at a minimum price of 91c an oz," Strauss pointed out. "However, if it continues to excercise this right—which is discretionary and not obligatory — its free stocks may be completely exhausted in a relatively short time and with the present trends of consumption and production a sharp rise in the price of silver would ensue thereafter.

"For this reason, the Treasury Department should re-examine its position to ascertain whether a change in its selling policy may not be advisable. The free stock of silver held by the Treasury has fallen in five months to about 180-million oz as against 211-million oz on June 30," Strauss said. In analyzing the situation he pointed out that the law would not prevent the Treasury from continuing its sales at a higher price, thus encouraging new production to meet the long-term rise in demand. Sales can be made only to consumers in the United States. Reflecting the tight position in silver, he said that the current quotation in the London market is the equivalent of 93⅝c an oz, against the Treasury price of 91c.

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Tin Export Quotas

(Continued from page 3)

pore, meanwhile, suggest producers are grieved that export quotas weren't scrapped entirely. Accumulated stocks of tin now in producers hands amount to about 12,000 tons altogether.

The next few months are as far ahead as it's safe to look for tin prospects right now. But the Tin Council has its long-term future to think of. The present Tin Agreement expires June 31, 1961, and a new agreement has to be drafted for United Nations discussions in May, 1960.

The Council still is at work on the details of this agreement. Earlier this year, it appointed a committee to work out the details "without prejudice" to the shape of the final pact. The Committee's still at work, so the Tin Council hasn't yet said what will emerge from its deliberations.

SLAB ZINC

★ ELECTROLYTIC
Special High Grade
High Grade
Continuous Galvanizing Line Grades

★ FIRE RETORT
High Grade
Intermediate
Continuous Galvanizing Line Grades
Brass Special
Select
Prime Western

American Zinc sales company

Distributors for AMERICAN ZINC, LEAD & SMELTING COMPANY
Columbus, Ohio ☆ Chicago ☆ St. Louis ☆ New York ☆ Detroit ☆ Pittsburgh

Kaiser Forecasts Increased Use Of Aluminum in Residences

Several trends have emerged in the American housing market which point to a substantial increase in the use of aluminum for residential construction during the next decade, according to William H. Slemp, Kaiser Aluminum & Chemical Corp., manager, business development — residential.

"We expect that these trends will increase the average amount of aluminum used per house from 130 lb per dwelling in 1958 to more than 1,000 lb per house toward the end of the decade," Slemp said. On the basis of 1.4-million annual home starts, the use of 1,000 pounds of aluminum per house would amount to 700,000 tons of aluminum yearly, or more than one-quarter of the present American primary aluminum capacity.

These trends are largely based upon the fact that more than 60% of today's home buyers have had previous experience with purchasing a home. A survey of these second-time buyers has revealed that they have strong, new requirements for their new home.

Aluminum's non-corrosive, low maintenance qualities can save up to $4,000 per house over the life of the loan and substantially reduce the time spent on maintaining the home.

The indoor-outdoor modern living concept which has become a national trend has led to a considerable use of aluminum for the expansive window and sliding glass door applications.

Another factor leading toward increased use of aluminum for home construction is the second-time buyer's demand for a home with a constant regulated temperature. Aluminum's excellent thermal and reflective properties make its use for siding, roofing and insulation an important cost saver in producing the constant-temperature home.

Aluminum Foils Appoints Marketing—Sales VP

Thomas W. Allison has been appointed vice president in charge of marketing and sales for Aluminum Foils Inc., it was announced by Louis C. Habegger, vice president and general manager.

Allison's promotion is part of an expansion move occasioned by increased demand for coiled sheet, foil and super purity aluminum produced by Aluminum Foils' integrated plant at Jackson, Tennessee. Since 1956 shipments of aluminum from the plant have more than doubled and in 1959 reached 221% of the 1956 total. The company is now North America's largest producer of super purity aluminum, company officials said.

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Copper

(Continued from page 3)

will actively solicit new ideas for the use of copper and copper products. A forerunner to the technical committee actually has been functioning during the past year, and has developed many ideas and projects for new copper uses and products. Practical research work on these matters will be started immediately.

The market development committee will be used to advise the technical committee on the practicability of projects, and to publicize projects successfully completed.

All inventions, processes, developments, or results of research, sponsored or underwritten by the association, become the property of the association. Whenever a patent is granted, the association will make available non-exclusive licenses on uniform terms to any person or concern which wishes to make use of the patent. A policy of liberal publication of unpatented developments will be followed.

Iron, Steel and Coke

PIG IRON – Per gross ton Valley furnaces: Bessemer, $67.00, basic, $66.00 and No. 2 foundry $66.50.

STEEL – Per net ton, f.o.b. mill, Pittsburgh, billets and slabs, $80.00; Bars per 100 lb, $5.675; plates and structural shapes, $5.30@$5.50.

STEEL SCRAP – Per gross ton, delivered Pittsburgh, No. 1 heavy $44-45, No. 2 heavy $35-36. Cleveland, No. 1 heavy $41-42, No. 2 heavy $28-29.

COKE – Per ton, Connellsville furnace, $15.00; foundry, $18.25.

Refractories

CHROME BRICK—Per ton f.o.b. shipping point: Chemically bonded Balt. $109, Calif. $119, burned, $103.

FIRECLAY BRICK—Per M:

Super Duty	$185
High Duty	$140
Low Duty	$103

MAGNESITE – Brick, per ton f.o.b. works, 9-in. straights, $140; chemically bonded, $119.

SILICA BRICK—Per M, Pennsylvania, $163; Alabama, $158; Illinois, $168.

Aluminum

(Continued from page 10)

usage of aluminum can develop makes this reserve position of the industry an asset to stable growth.

Aluminum's advance into new consumer areas, and into markets long dominated by other materials, has never been more evident than during 1959, and in the prospects for 1960.

Sales of aluminum building products rose a precipitous 40% this year; uses in the transportation field jumped 35%; and packaging applications grew a spectacular 50% over 1958.

Of the big new tonnage markets, the rise in applications and uses of aluminum in the field of residential building products showed the sharpest gain. But similar progress is evident elsewhere — in automotive uses, electrical equipment, commercial architecture, packaging, railroad rolling stock, rockets and missiles, highway applications, paints and pigments, and a host of other products.

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London Copper Prices

The following prices in £ sterling per long ton c.i.f. European ports are calculated by the London Metal Bulletin (see *M&MM* Feb. 13, 1958, p 3).

Dec. 14	255.687	Dec. 17	251.875
Dec. 15	253.630	Dec. 18	251.159
Dec. 16	253.304		
Av.	253.131		

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Brass and Bronze Ingot

85-5-5-5 (No. 115) 30¾c; 80-10-10 (No. 305) 35¼c; 88-10-2 (No. 215) 40¾c; Yellow (No. 405) 24¾c; and upward. Manganese bronze (No. 420) 28¼c.

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Tri-State Concentrates

Joplin, Dec. 22, 1959

(a) *Blende*	*Per Ton*
Prime coarse (60% zinc)	$76
Flotation, 60% zinc	$76

(a) Effective Nov. 2, 1959

Galena	
Coarse and flotation, 80% lead	(a)$141.72

(a) Effective Dec. 21, 1959

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Lead Average (Monterrey)

The net price realized by the American Smelting & Refining Co. on all of its sales of Mexican pig lead, including metal sold for consumption in Mexico, during the week ended Dec. 19, 1959, was 8.91c (U.S. per lb. f.o.b. refinery) Monterrey, Mexico.

Dealers' Scrap Prices

Dealers' buying prices, f.o.b. New York or equivalent freight points, for wholesale quantities, in cents per lb.

No. 1 copper wire	25½-26
Heavy copper & wire, mixed	22½-23
Light copper	21-21½
No. 1 composition	18½-19
Composition turnings	17½-18
Light brass	12-12½
Yellow brass turnings, mix	12-12½
Heavy yellow brass, mixed	13-13½
Auto radiators, unsweated	14½-15
Brass pipe, cut	15-15½
Rod brass turnings, No. 1	12½-13
Rod ends, brass	13-13½
New soft brass clips	15½-16
Cast aluminum, mixed	11-11½
Aluminum crankcases	11-11½
Aluminum clips, new soft	15-15½
Sheet aluminum, old clean	11-11½
Aluminum turnings, clean	6-6½
Zinc die cast, mixed	1½-2
Zinc die cast, new	3-3½
Old zinc	3-3½
New zinc clips	4½-5
Soft or hard lead	8½-9
Battery plates	4½-5
Babbitt mixed	9½-10
Linotype or stereotype	9-9½
Electrotype	8-8½
Solder joints close cut	13½-14
Block tin pipe	78-79
Autobearing babbitt	40-41
Monel Clips, new	30-32
Monel sheet, clean	26-28
Nickel, rod ends	52-54
Nickel, clippings	52-54

Fabricator Copper Stocks Down

U.S. fabricator copper and brass data for October and November 1959 and November 1958, in short tons:

Fabricator Activity	Nov. 1958	Oct. 1959	Nov. 1959
Shipments	110,387	100,302	102,837
Sales	111,494	102,746	115,920
Unfilled orders	157,799	211,359	224,442
Fabricators' Copper			
Stocks	419,914	431,612	412,401
On order	88,580	119,806	127,162
Receipt	131,188	68,648	83,626

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Smelters' Copper Scrap Prices

Custom smelters' buying prices for scrap, carload lots, refinery:

No. 1 copper and wire, 29½c; No. 2 heavy copper, 26c; light copper, 23¾c; refinery brass, 24¼c.

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A Custom Smelter Copper Price December 17-23

The following prices are computed by *E&MJ Metal and Mineral Markets* from data on flat price and average price sales reported by the American Smelting & Refining Co. They refer to electrolytic copper in standard shapes.

Delivered consumers' plants	34.750c
F.O.B. refinery	34.350c

They are for sales in the U.S. market and are adjusted to the nearest one-eighth cent. A one-quarter cent deduction for selling commission has been made.

N.Y. Commodity Exchange

	COPPER					LEAD				ZINC				TIN			
	Dec.		Jan.			Dec.		Jan.		Dec.		Jan.		Dec.		Jan.	
Dec.	Bid	Asked	Bid	Asked	C	Bid	Asked	Bid	Asked	Bid	Asked	Bid	Asked	Bid	Asked	Bid	Asked
17	33.95	33.95	32.15	32.15	367	11.20	11.28	11.20	11.28	11.65	11.71	11.70	11.71	*	*	*	*
18	34.27	34.27	32.70	32.70	480	11.20	11.25	11.22	11.25	11.65	11.75	11.65	11.70	*	*	*	*
21	34.05	34.05	33.05	33.05	371	11.00	11.10	11.05	11.10	11.60	11.68	11.60	11.68	*	*	*	*
22	33.80	33.85	32.96	32.96	296	11.00	11.08	11.05	11.10	11.60	11.75	11.65	11.75	*	*	*	*
23	34.02	34.02	33.12	33.12	440	11.16	11.25	11.15	11.15	11.65	11.75	11.68	11.68	*	*	*	*

*Trading suspended

Closing quotations on the N.Y. Commodity Exchange in cents per lb. C is number of contracts traded for the seven months of the year for which the Exchange accepts trading. Each contract is for 25 tons. Where bid and asked prices are the same, closing quotation was one at which transactions occurred.